



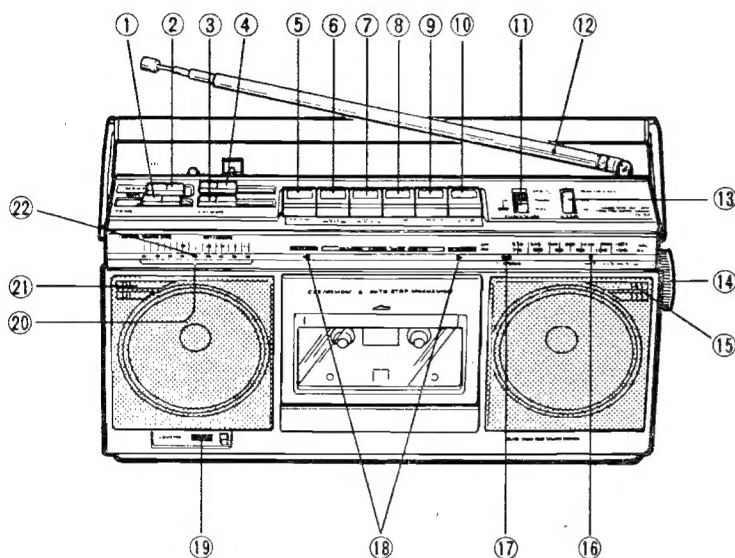
HITACHI

TRK-8430EX

SERVICE MANUAL

No. 1331

KEY TO ILLUSTRATIONS



- ① TONE CONTROL
- ② MODE SWITCH
- ③ VOLUME CONTROL (R)
- ④ VOLUME CONTROL (L)
- ⑤ PAUSE BUTTON
- ⑥ FAST FORWARD/CUE BUTTON
- ⑦ REWIND/REVIEW BUTTON
- ⑧ PLAYBACK BUTTON
- ⑨ RECORD BUTTON
- ⑩ STOP/EJECT BUTTON
- ⑪ FUNCTION SELECTOR
- ⑫ TELESCOPIC ANTENNA (AERIAL)
- ⑬ BAND SELECTOR
- ⑭ TUNING CONTROL
- ⑮ BUILT-IN MICROPHONE (R)
- ⑯ FREQUENCY INDICATOR
- ⑰ FM STEREO INDICATOR
- ⑱ STEREO WIDE INDICATOR
- ⑲ TAPE COUNTER
- ⑳ LEVEL INDICATORS
- ㉑ BUILT-IN MICROPHONE (L)
- ㉒ BATT/OPERATION INDICATOR

SPECIFICATIONS

GENERAL SECTION

Semi-conductors : IC's : 8
Transistors : 14
Diodes : 8
LED's : 13

Power (Mains) Supply : AC : 100 to 110V, 115 to 127V,
200 to 220V, 230 to 250V
50/60 Hz (Using AC adapter)
DC : 9V (IEC R6×6 or equivalent)

Power (Mains) Consumption : 13W

Power output : 2.0W/Ch (T.H.D. 10%)

Speaker : 77mm 4 Ohms×2

Dimensions : 300(W)×144(H)×60(D)mm

Weight : 2.0kg (with batteries)

TUNER SECTION

Circuit System : FM/MW 2-band superheterodyne

Tuning Range : FM : 76 to 108 MHz
MW : 530 to 1605 kHz

Sensitivity : FM : 10 dB (pra.) 2 dB (max.)
MW : 45 dB (pra.) 30 dB (max.)

Intermediate Frequency : FM : 10.7 MHz
MW : 455 kHz

Antennas (Aerials) : FM : Telescopic antenna (aerial)
MW : Built-in ferrite-core antenna (aerial)

TAPE RECORDER

Tape : Cassette tape (C-30, 60, 90)

Tape Speed : 4.75cm/s

Recording System and Bias Frequency : AC bias, 29 kHz

Erasing System : Quasi-AC erase

Track System : 4 track 2 Channel.

Frequency Response : 80 Hz to 10 kHz

S/N (Signal to Noise Ratio) : 40 dB

Cross Talk : 65 dB (Bet. Track)
35 dB (Bet. Channel)

Erase Ratio : -60 dB

Input Sensitivity and Impedance : Microphone : -55 dB, 500 ohms
LINE IN : 500mV, 50K ohms
LINE OUT : 500mV, 5.6K ohms
Headphone : 56 ohms
Ext. speaker : 4 ohms

Output Level and Impedance :

Fast Forward or Rewinding Time : 135 sec. (Using C-60)

Distortion : 2%

Motor : DC motor

CASSETTE TAPE RECORDER WITH FM/MW RADIO

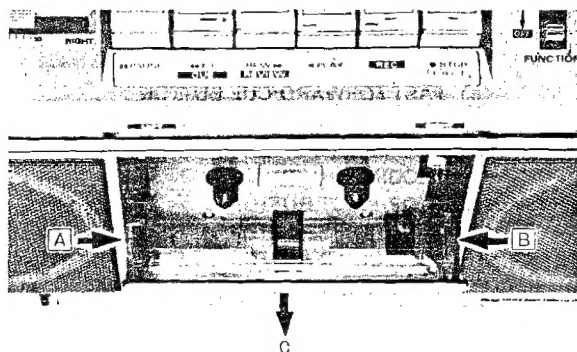
SAFETY PRECAUTION

The following precautions should be observed when servicing.

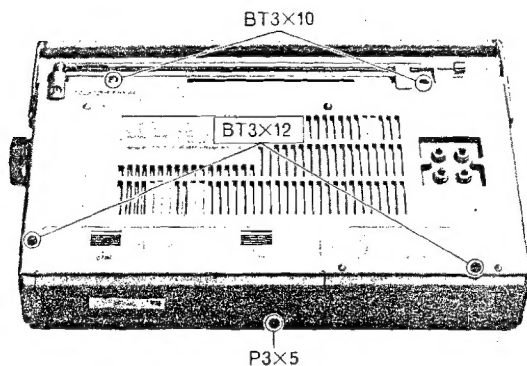
1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes. Critical parts are marked with \triangle in the schematic diagram, and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

DISASSEMBLY

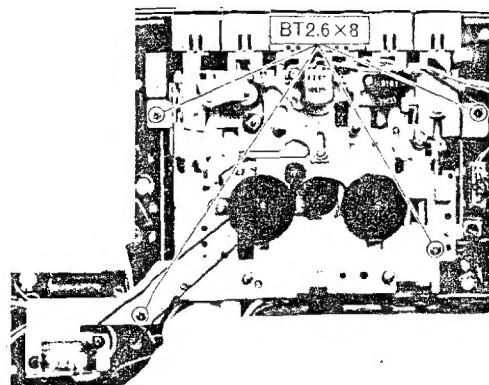
1. Cassette Lid



2. Front Case

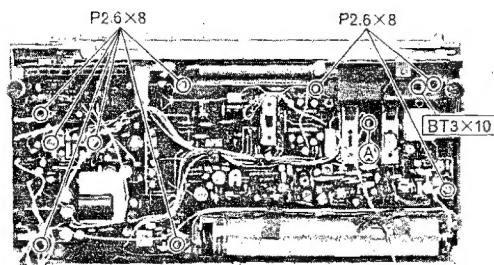


3. Cassette Chassis

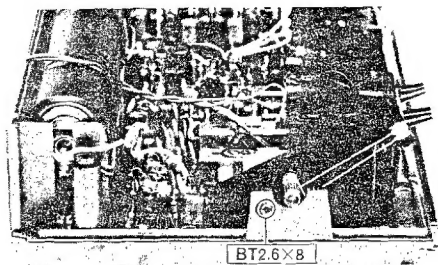


4. Main P.C. Board

4-1

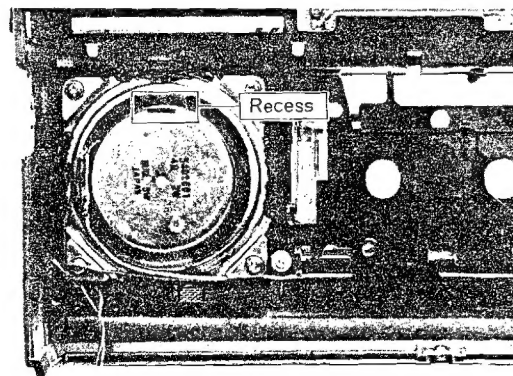


4-2

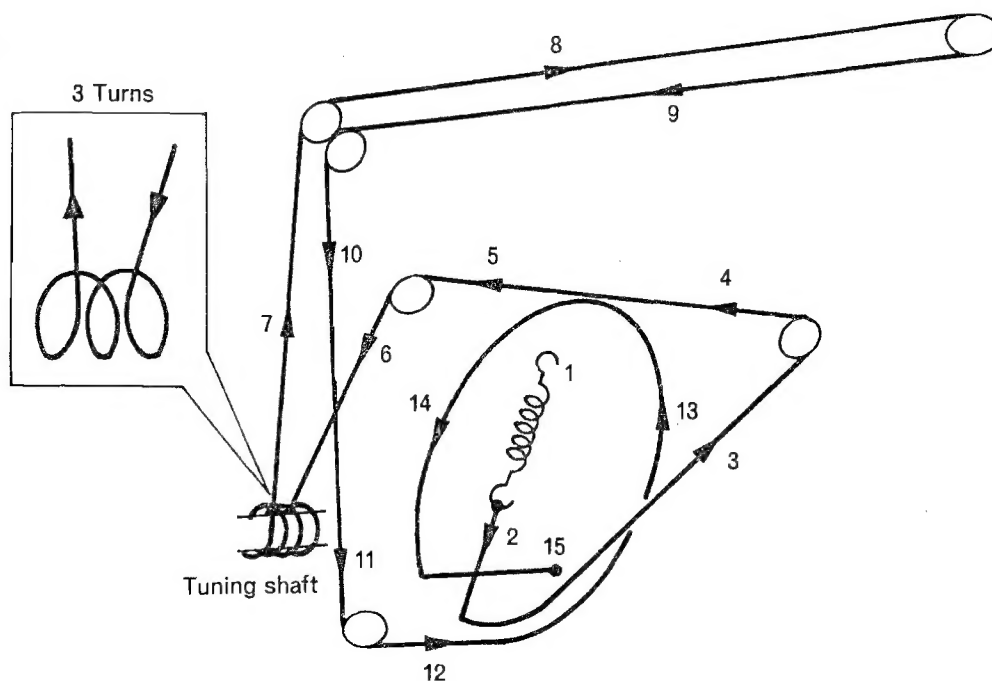


5. Cautions on installing the speakers

Install the left side speaker with the recess set to the top (because the speaker and band select switch will be in contact) viewed from the inside of the set.



DIAL CORD STRINGING



STRINGING METHOD

- 1) Turn the dial pulley fully counterclockwise.
- 2) Apply the string in the order of numbers. (Nos. 1—15)
- 3) Set the pointer (frequency indicator LED) to minimum tuning frequency position.

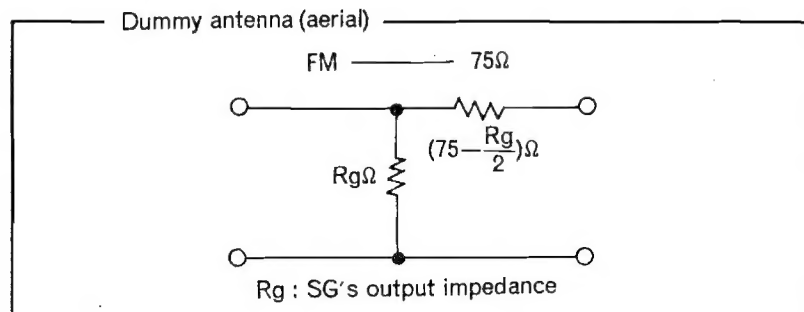
LUBRICATION

Lubricate one or two drops of machine oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed below once every 1000 hours or once a year under normal conditions of use. Avoid oiling then excessively, or rotation may become irregular because of oil splashes.

LUBRICATION POINT	OIL OR GREASE
Motor shaft bearing	Oil
Capstan shaft bearing	Oil
Pressure roller bearing	Oil

ADJUSTMENT

TUNER SECTION

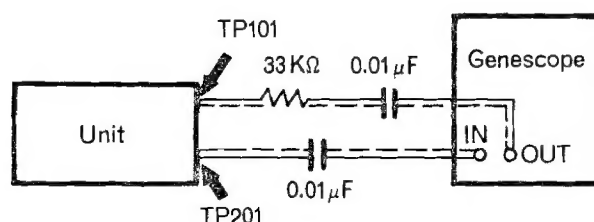


1. FM IF adjustment

Setting :

- Function selector : RADIO
- Band selector : FM
- Mode switch : MONO

Connection :



Adjustment :

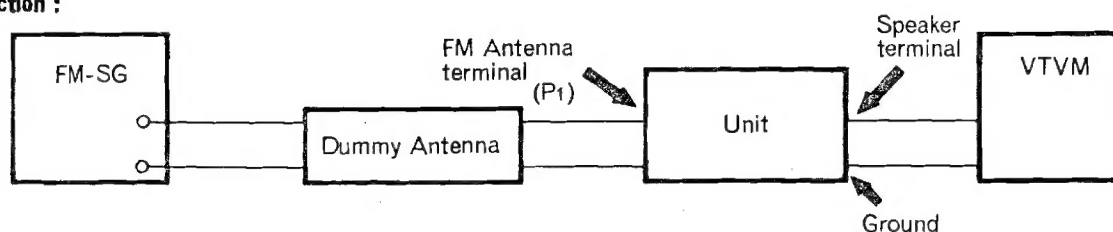
Genescope	Dial pointer position	Adjust	Reading	Remarks
10.7 MHz	Highest	T204	—	Turn T204 fully counterclockwise.
		T201		1) f_c : Specified center frequency of the ceramic filter. 2) Reduce the level of the genescope to make one waveform.
		T204		Adjust T204 for a symmetrical sinewave (S curve) output.

2. FM RF (Covering & Tracking) adjustment

Setting :

- Function selector : RADIO
- Band selector : FM
- Mode switch : MONO

Connection :



Adjustment :

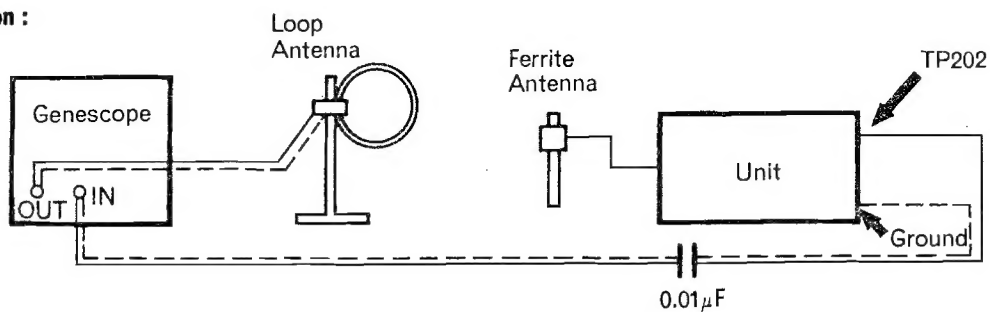
Item		Signal generator		Dial pointer position	Adjust	Reading	Remarks
		Frequency	Modulation				
1	Covering	75 MHz	400 Hz 30%	Lowest	L102	Max.	
2		109 MHz		Highest	CT102		
3	Repeat 1 and 2.						
4	Tracking	78 MHz	400 Hz 30%	78 MHz	L101	Max.	
5		106 MHz		106 MHz	CT101		
6	Repeat 4 and 5.						

3. AM IF adjustment

Setting :

- Function selector : RADIO
- Band selector : AM

Connection :



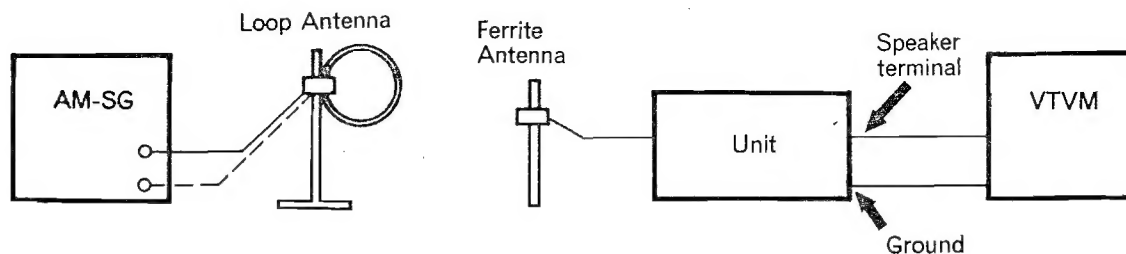
Genescope		Dial pointer position	Adjust	Reading	Remarks
Frequency	Modulation				
455 kHz	—	Highest	T202 T203	Max.	—

4. AM RF (Covering & Tracking) adjustment

Setting :

- Function selector : RADIO
- Band selector : AM

Connection :



Adjustment :

Item		Signal generator		Dial pointer position	Adjust	Reading	Remarks
		Frequency	Modulation				
1	Covering	515 kHz	400 Hz 30%	Lowest	L105	Max.	
2		1,650 kHz		Highest	CT104		
3	Repeat 1 and 2.						
4	Tracking	600 kHz	400 Hz 30%	600 kHz	L104	Max.	
5		1400 kHz		1400 kHz	CT103		
6	Repeat 4 and 5.						

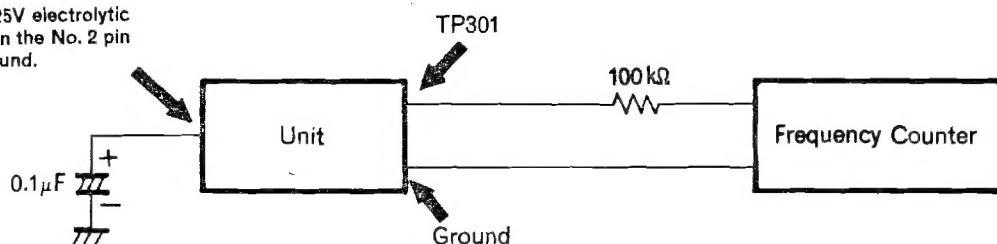
5. FM MPX (Multiplex) adjustment

Setting :

- Function selector : RADIO
- Band selector : FM
- Mode switch : STEREO

Connection :

Connect a 10 μ F 25V electrolytic capacitor between the No. 2 pin of IC301 and ground.



Adjustment :

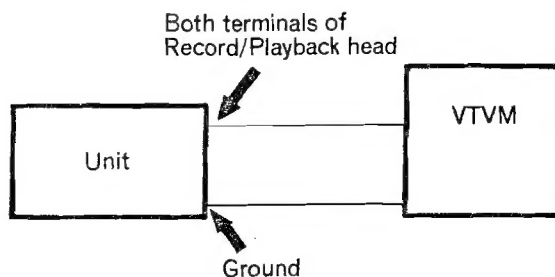
Adjust	Reading	Remarks
RT301	19 kHz \pm 100 Hz	—

TAPE DECK SECTION

1. Bias current adjustment

Setting : Recording mode

Connection :

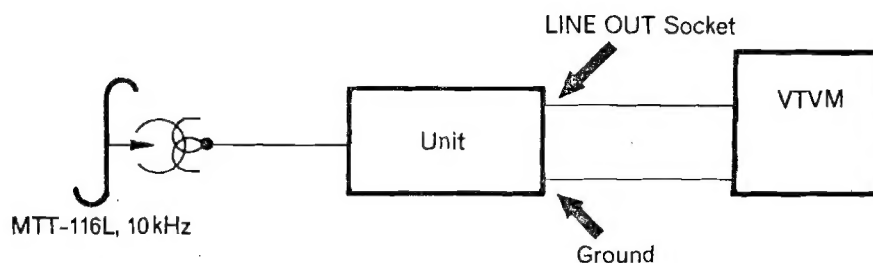


Adjustment : Set the record mode. Adjust RT460 so that the bias voltage of 8V is applied to the both terminals of Record/Playback head.

2. Head azimuth adjustment

Setting : Playback mode

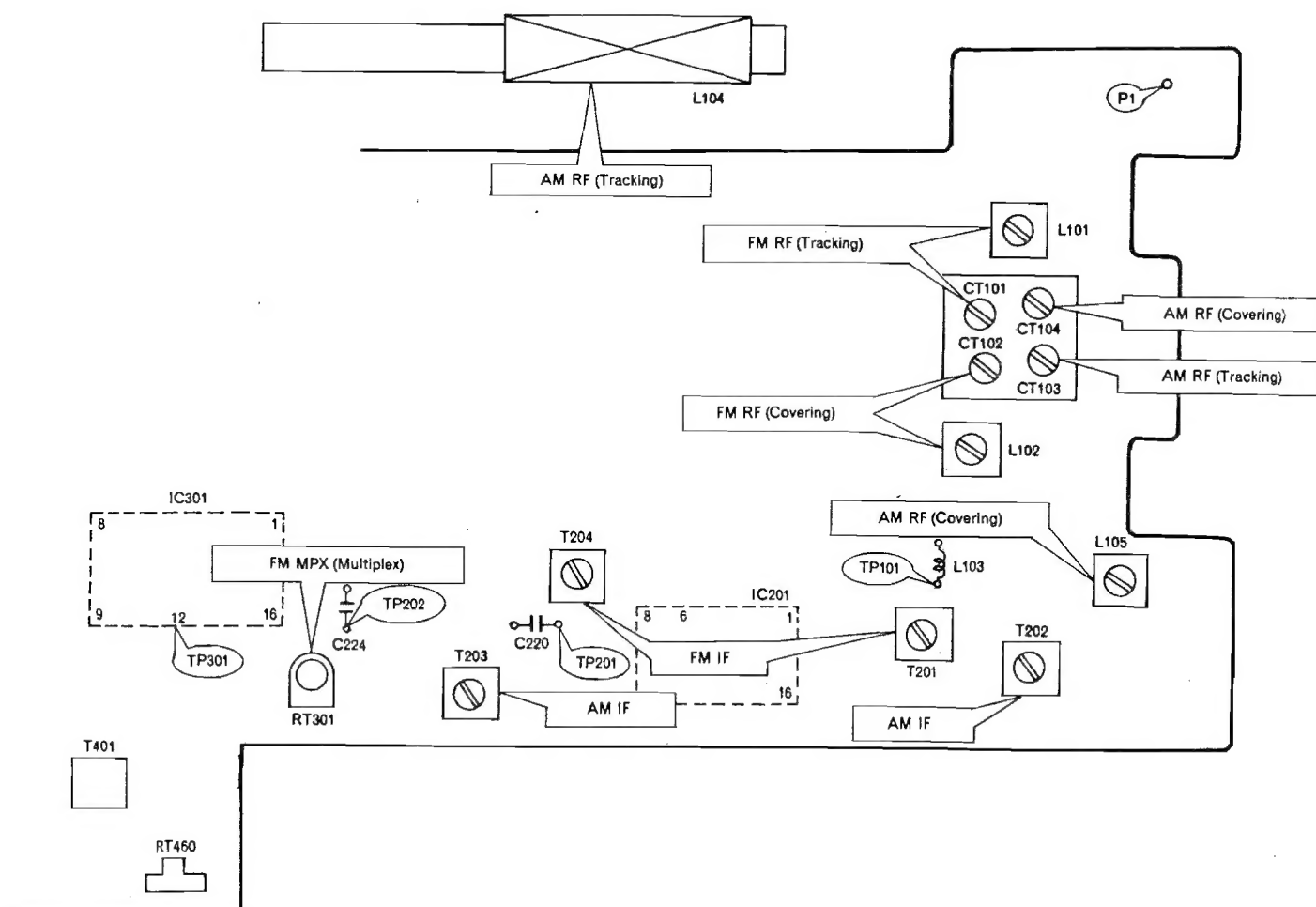
Connection :



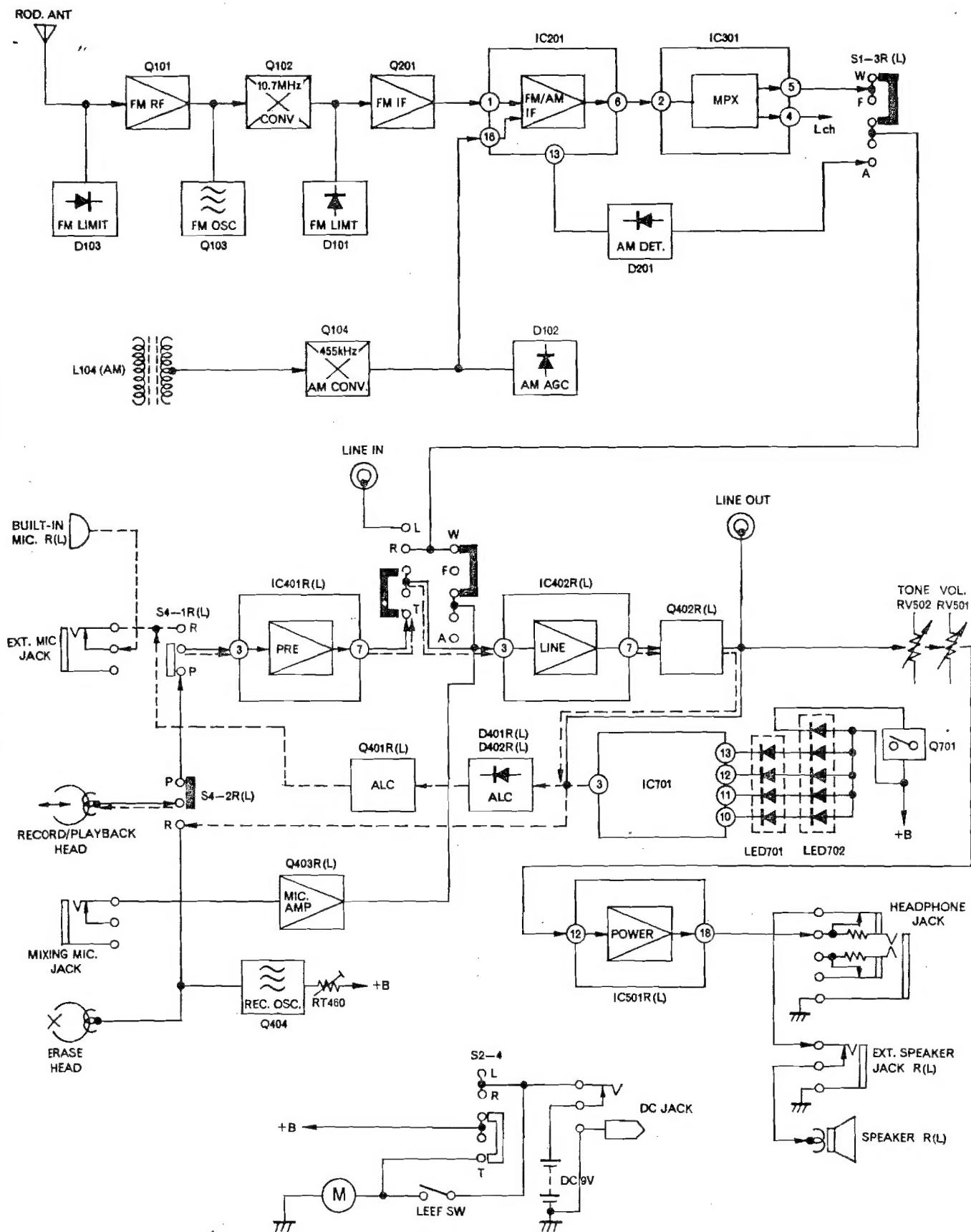
Adjustment : Playback a test tape (MTT-116L, 10 kHz) and adjust the azimuth adjustment screw for maximum output.

3. Inspection of mechanism

Mode	Item	Pressure or Torque
Playback	Pressure of pressure roller	350~420gr
	Take-up torque	35~55gr-cm
	Take-up reel back tension	5gr-cm or less
	Supply reel back tension	1.5~2.5gr-cm
Rewind	Rewind torque	70gr-cm or more
Fast Forward	Fast Forward torque	70gr-cm or more

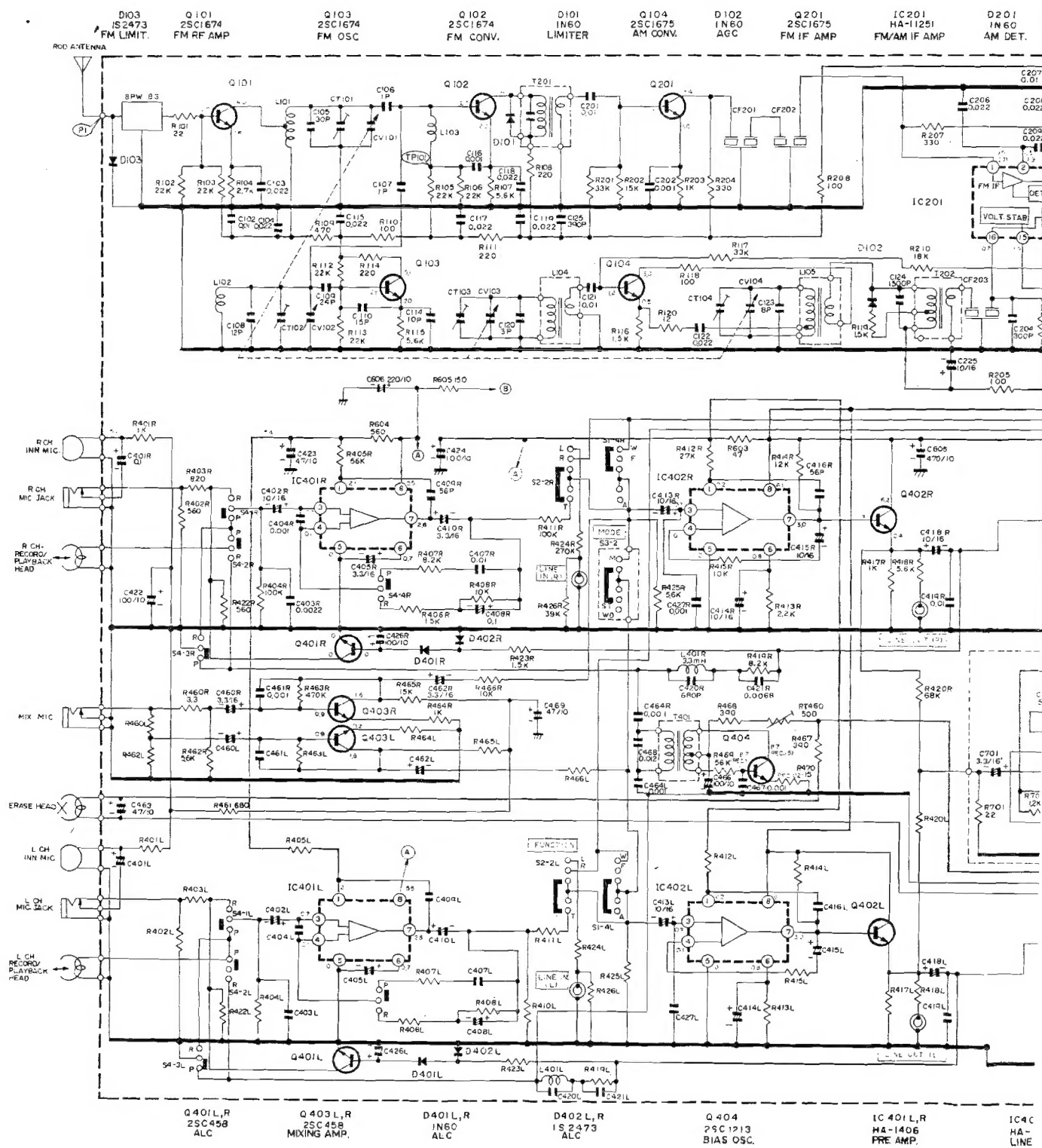
ADJUSTMENT PARTS LOCATION


BLOCK DIAGRAM



SCHEMATIC DIAGRAM

3.



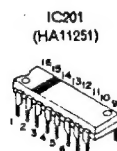
Q101, 103
(2SC1674L)
Q104, 201
(2SC1675L)
Q401, 402, 403R (L), 701
(2SC458C)



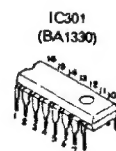
Q404
(2SC1213C)



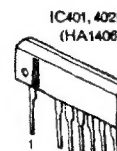
Q601
(2SC1368C)



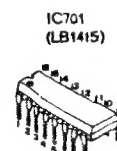
IC201
(HA11251)



IC301
(BA1330)



IC401, 402R(L)
(HA1406)



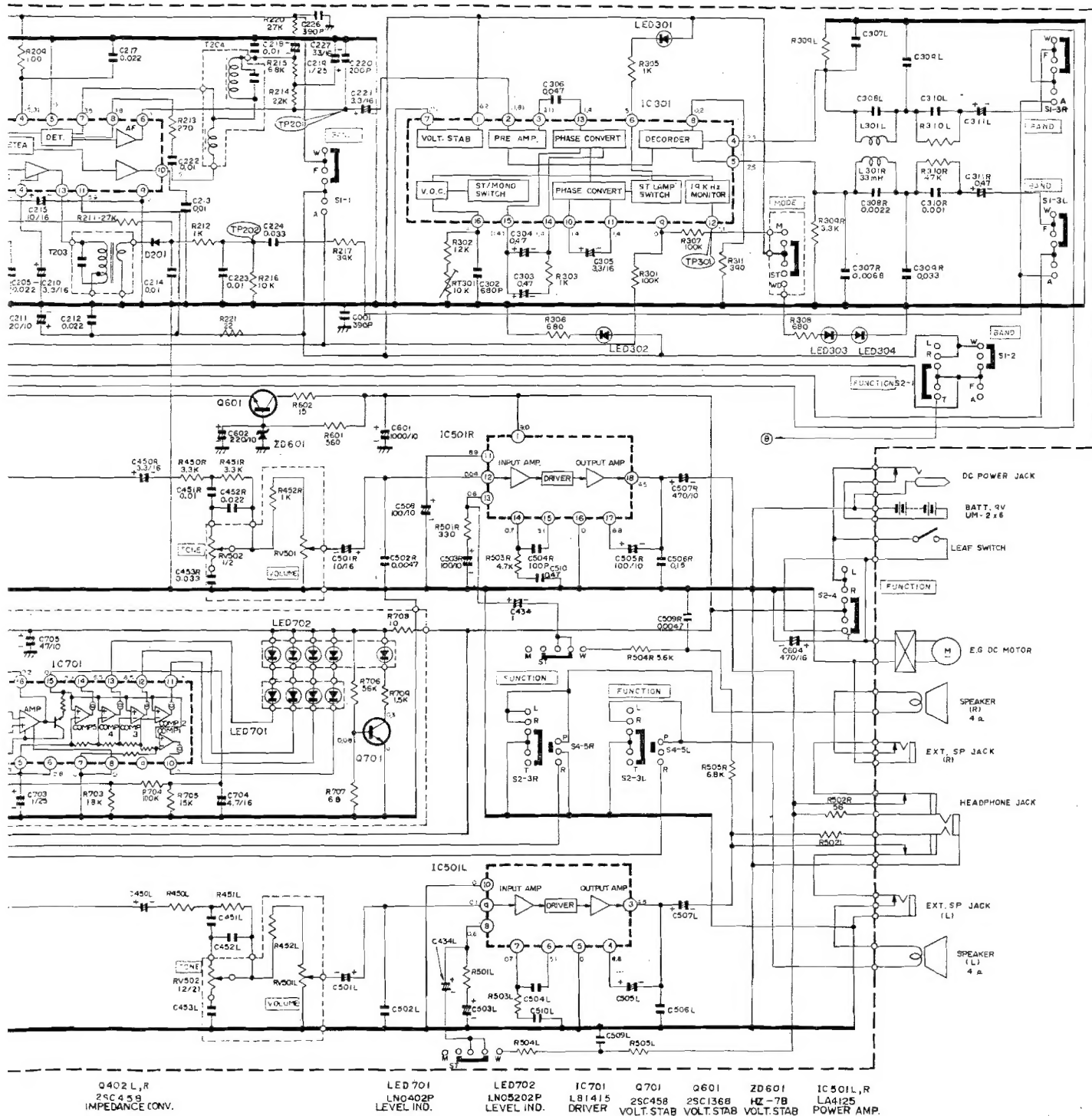
IC701
(LB1415)

IC 301
8A-1330
MPX

LED301
GL-9PR2
STERE PILOT

LED302
GL-31AR1
POINTER IND.

LED303,304
GL-4PR6
ENHANCED SEPARATION IND.



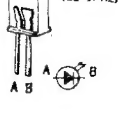
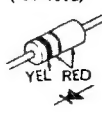
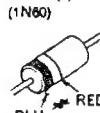
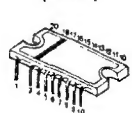
IC501
(LA4125)

D101,102,201
D401R(L)
(1N60)

D103,402R(L)
(1S2473VE)

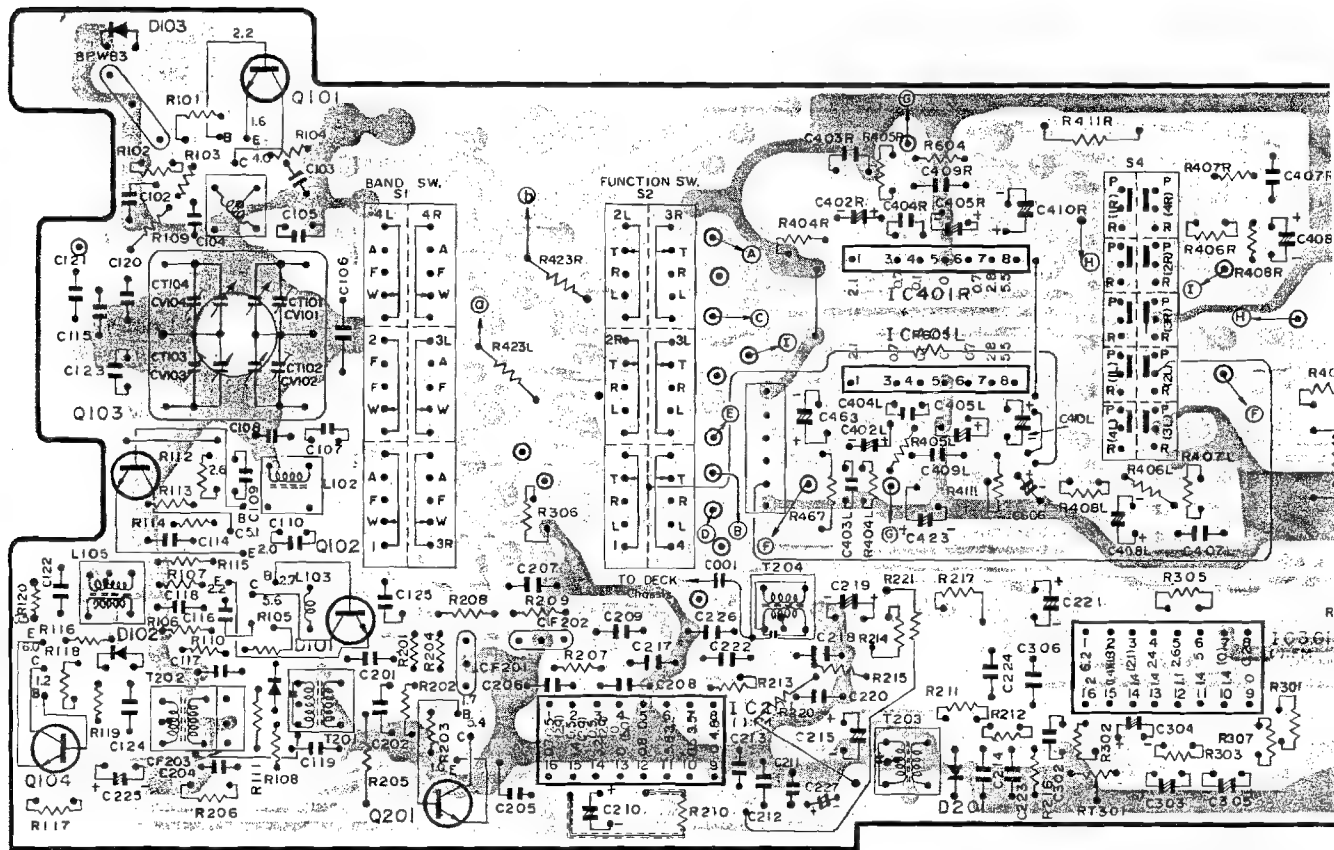
LED303,304
(GL-9PR6)

LED301
(GL-9PR2)





CIRCUIT BOARD DIAGRAM



Note

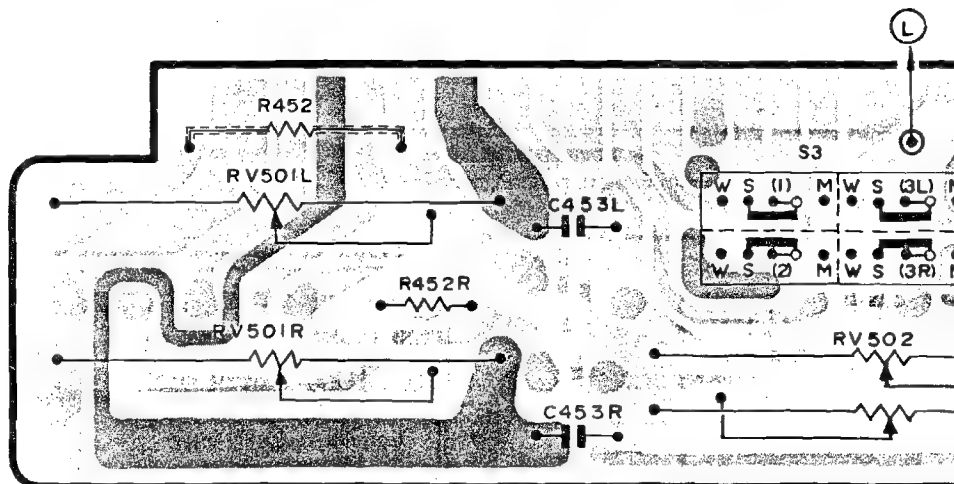
1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.

Circuit No.	
Value	No indicated Ω (Ohm) M : 1000 k Ω
Tolerance	No indicated $\pm 5\%$ K : $\pm 10\%$ M : $\pm 20\%$
Wattage	No indicated $\frac{1}{4}$ W
Sort	No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film

Circuit No.	
Value	No indicated μ F P : PF
Tolerance	No indicated $\pm 10\%$ J : $\pm 5\%$ M : $\pm 20\%$ Z : $+80\%$ -20% D : ± 0.5 pF C : ± 0.25 pF
Sort	Ceramic Electrolytic Mylar Polyester Styrol
Voltage	No indicated 50WV

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with *, use specified ones stated on parts list since required temperature characteristics.

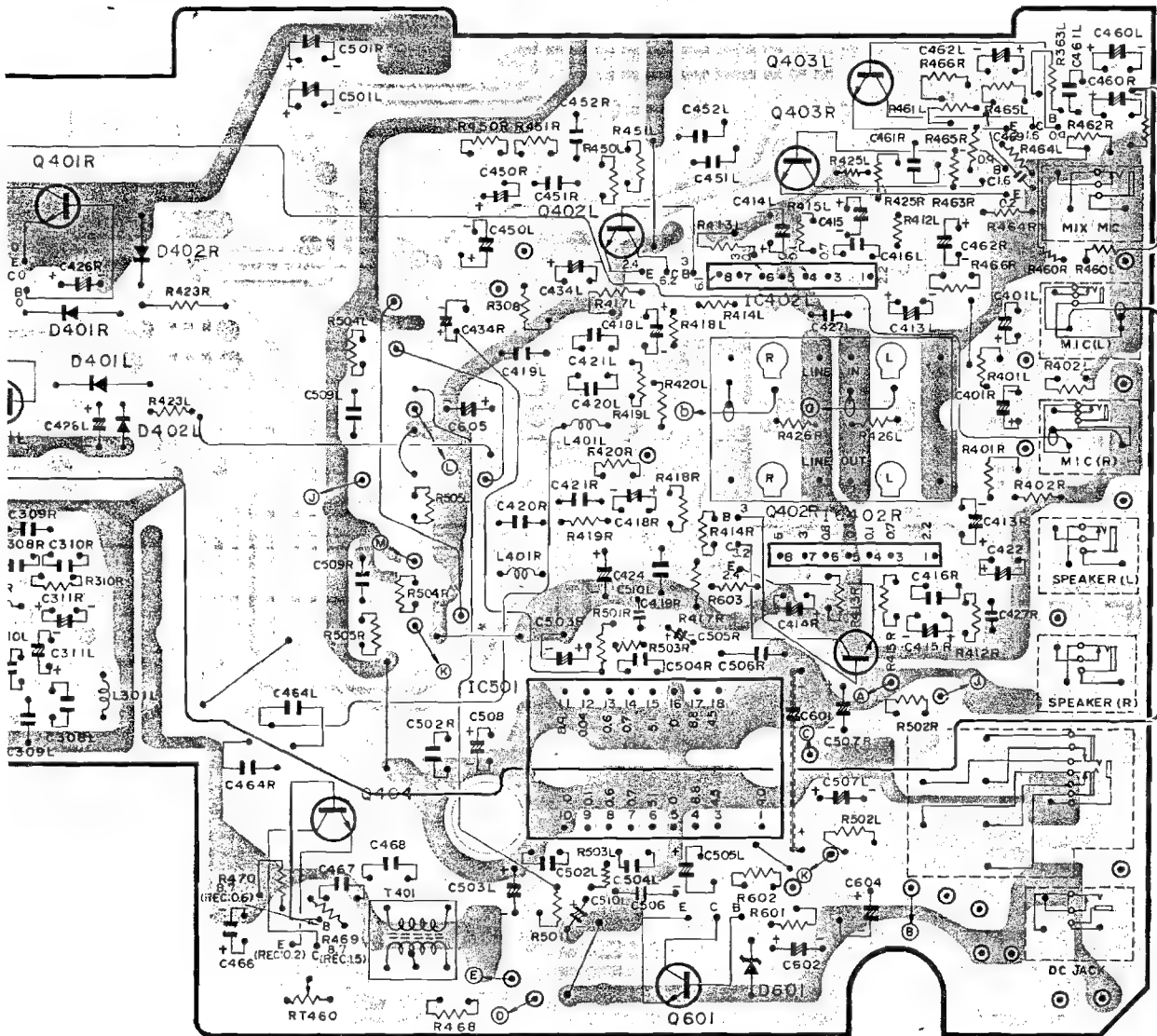
VOLUME P.C BOARD



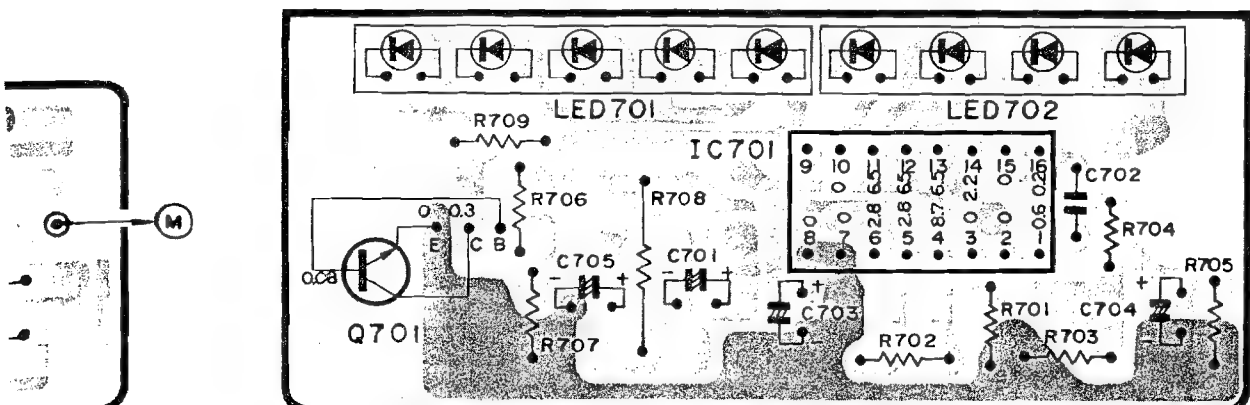
 : Ground,

Signal, +B

MINI PC BOARD



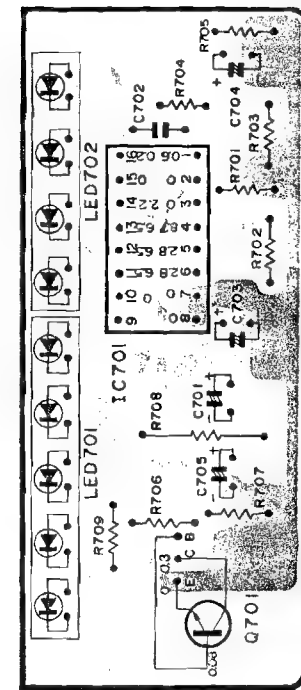
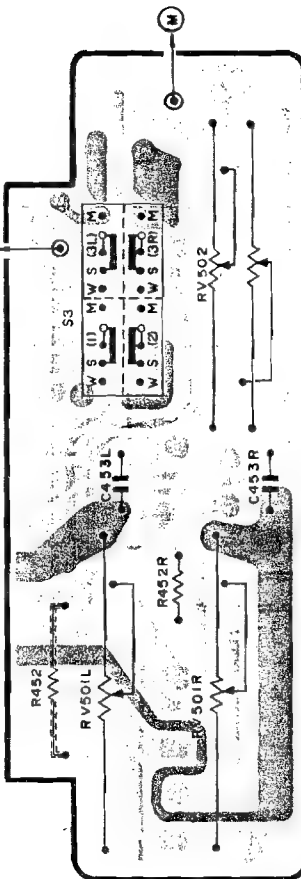
LEVEL INDICATOR P.C BOARD



: Ground,



LEVEL INDICATOR P.C BOARD



2. Voltage measured at base of chassis with minimum volume control and no signal.

2. Voltage measured at base of chassis with minimum volume control and no signal.

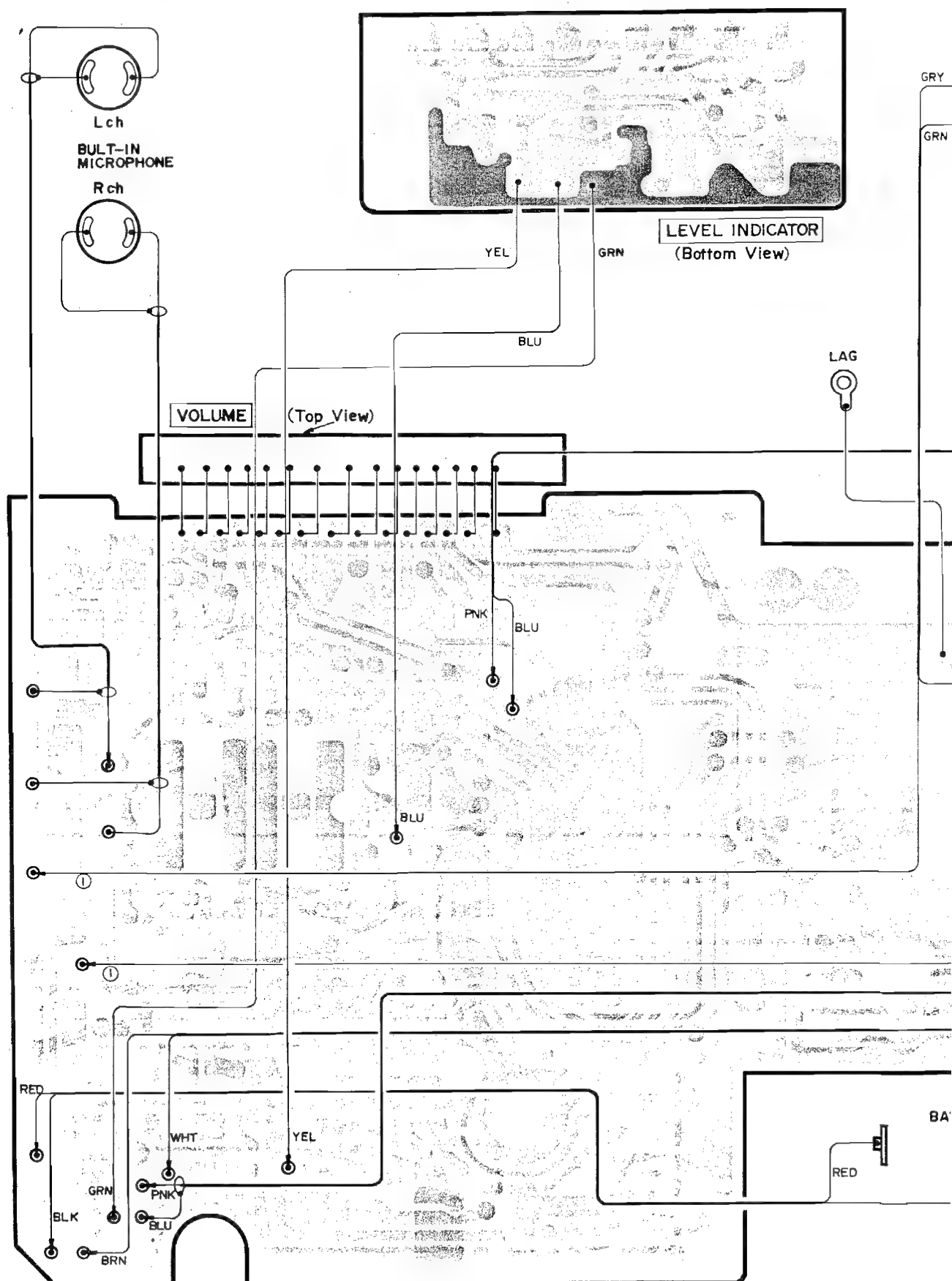
Value	Tolerance	Wattage	Sort
No indicated Ω (Ohm) M: 1000 Ω	No indicated $\pm 5\%$ M: $\pm 10\%$ K: $\pm 5\%$	No indicated $\pm W$	No indicated Carbon film RW: Wirewound RW: Wirewound RS: Oxide metal film RN: Eased metal film

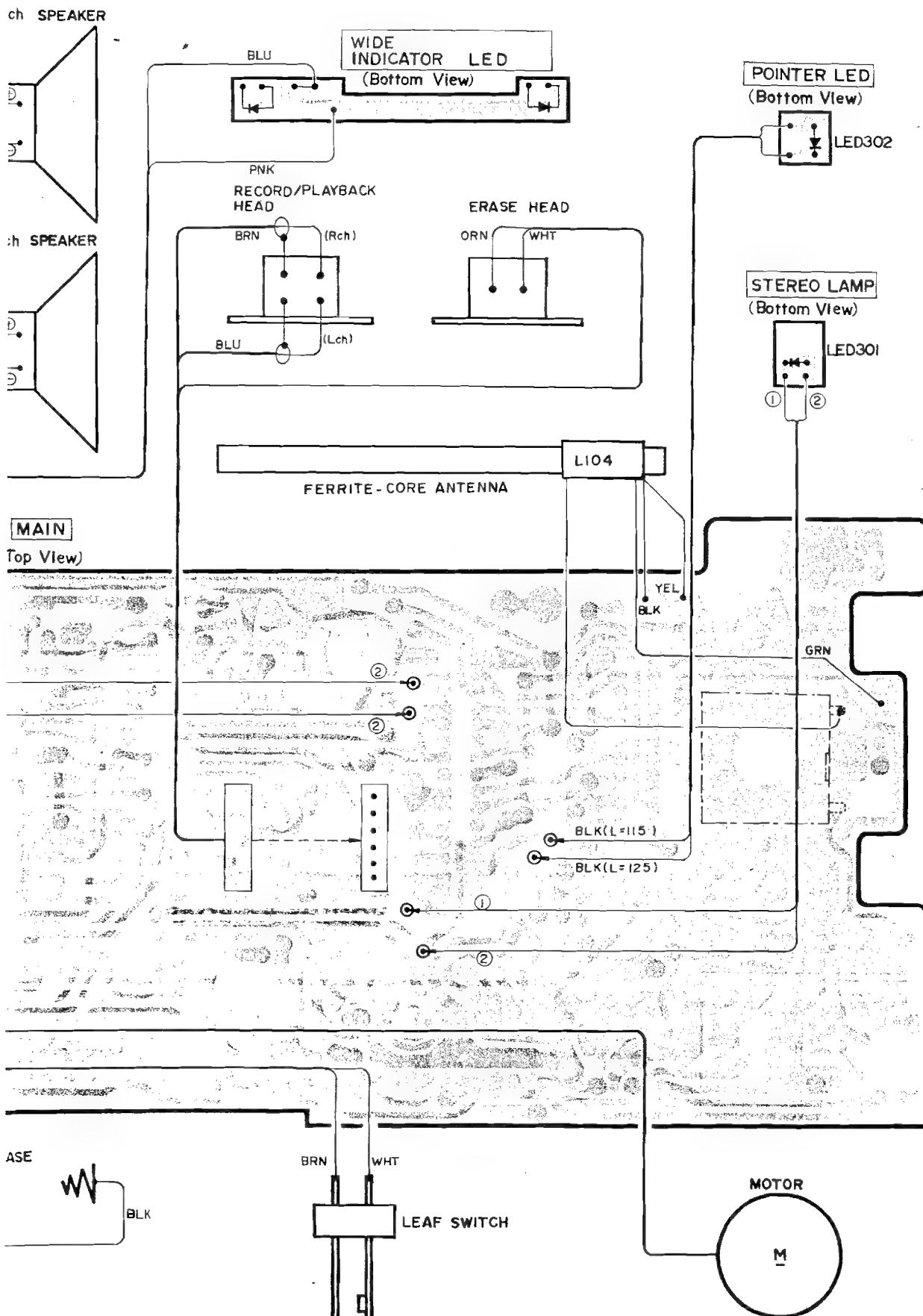
Circuit No.	No indicated μF
p : PF	No indicated ±10%
J : ± 5%	
M : ±20%	
G : 180%	- 20%
K : 100%	
C : 10-200F	
	Ceramic
	Electronic
	M-Wave
	Polyester
	Synyl
	Various other plastics

C102
0.17 μF

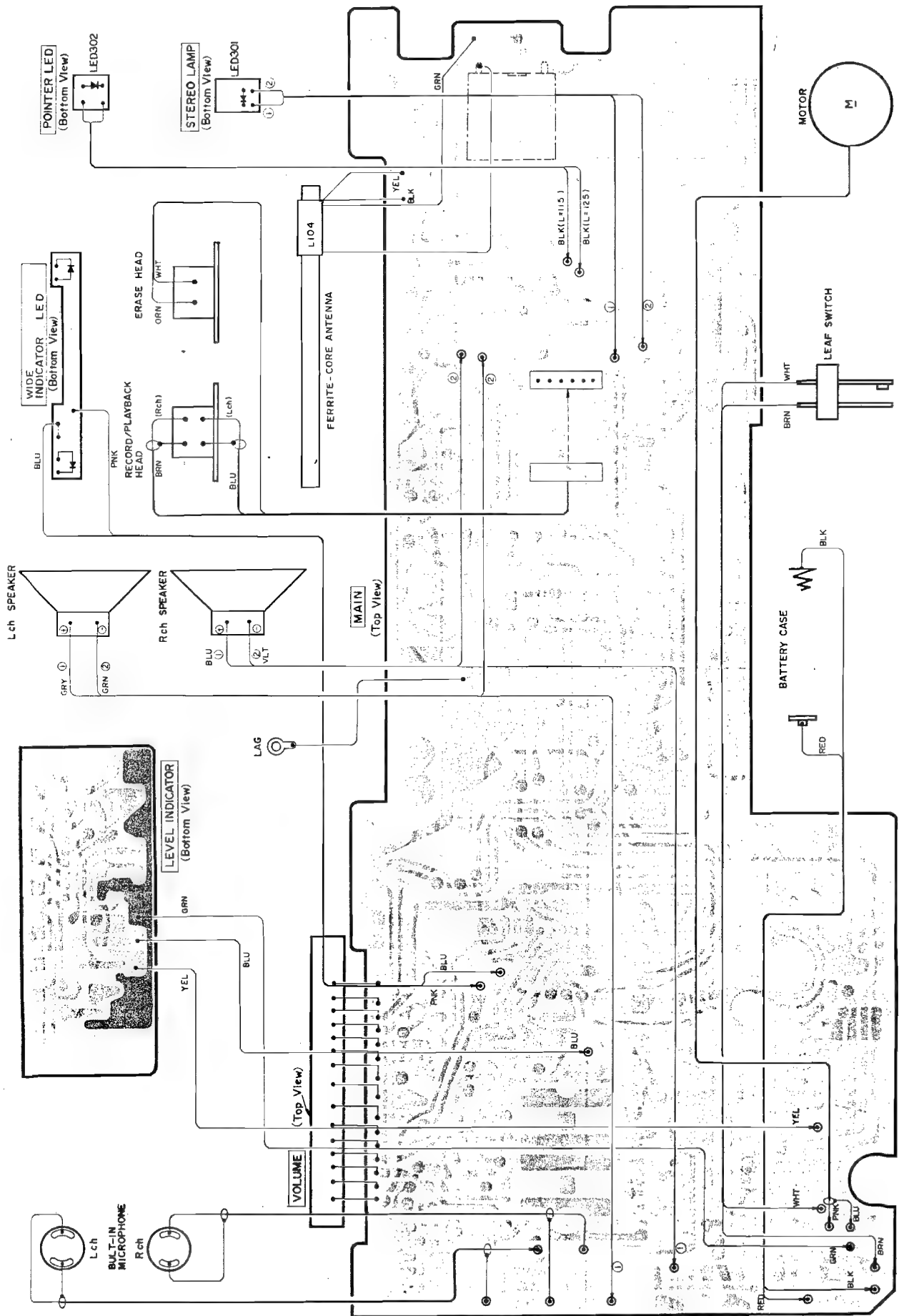
3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with ∞ , use specified ones stated on parts list since required temperature characteristics.

WIRING DIAGRAM





WIRING DIAGRAM

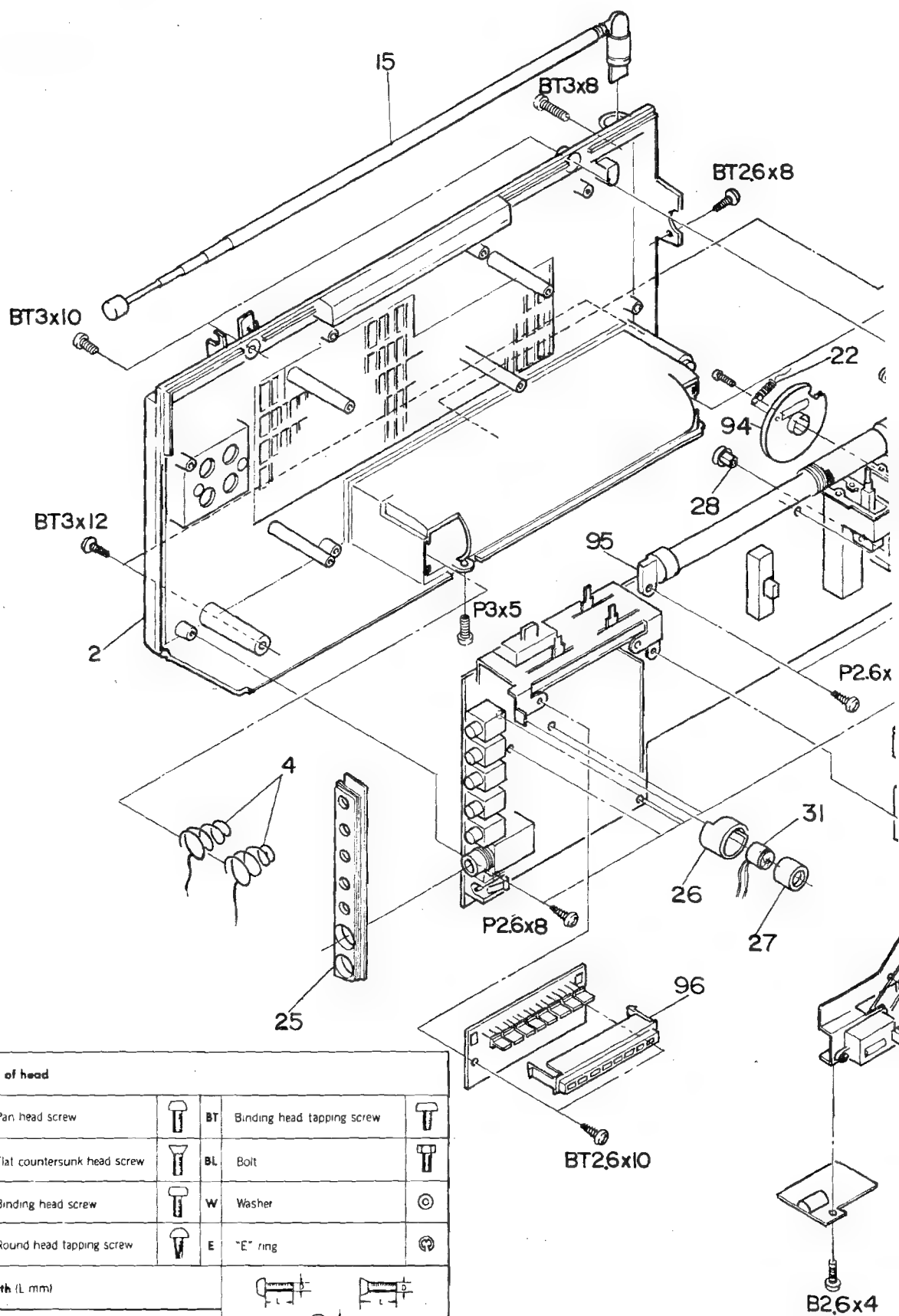


REPLACEMENT PARTS LIST

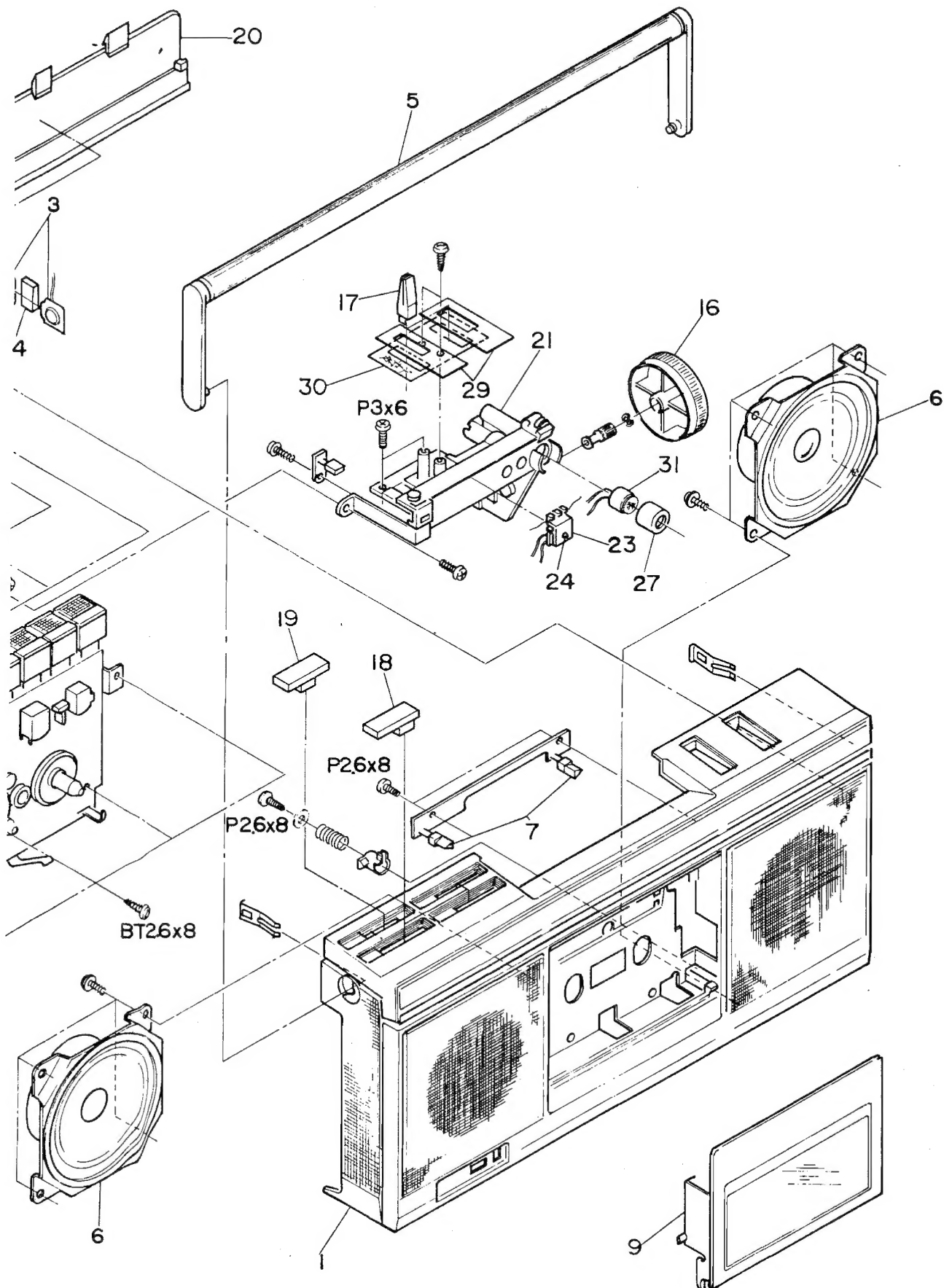
SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS			L104	5110481	FERRITE CORE ANTENNA
CT101-104	5052461	PLASTIC FILM VARIABLE CAPACITOR	L105	5120721	AM OSCILLATOR COIL
CV101-104	5052461	PLASTIC FILM VARIABLE CAPACITOR	L301LR	5150571	CHOKE COIL 33MH
RESISTORS			L401LR	5150571	CHOKE COIL 33MH
RT301	0151872	SEMI VARIABLE 10KOHM	MISCELLANEOUS		
RT460	0151868	SEMI VARIABLE 500 OHM		5670466	JACK
RV501LR	5026041	VARIABLE 10KOHM(A)		5671262	DC JACK
RV502	5026042	VARIABLE 10K OHM(A)		5674241	HEADPHONE JACK
SEMI-CONDUCTORS				5676281	US PIN JACK
D101	0575005	DIODE GERMANIUM 1N60 80M	BP101	5162001	BAND PASS FILTER
D102	0575005	DIODE GERMANIUM 1N60 80M	CF201	5160301	CERAMIC FILTER 10.7MHZ
D103	5330572	DIODE SILICON 1S2473HC 100M	CF202	5160301	CERAMIC FILTER 10.7MHZ
D201	0575005	DIODE GERMANIUM 1N60 80M	CF203	5160111	CERAMIC FILTER
D401LR	0575005	DIODE GERMANIUM 1N60 80M	S1,2	5604461	LEVER SWITCH (FUNCTION, BAND)
D402LR	5330572	DIODE SILICON 1S2473HC 100M	S3	5620082	SLIDE SWITCH (MODE)
IC201	5351411	IC HA11251	S4	5620901	SLIDE SWITCH (REC./P.B.)
IC301	5350684	IC HA1330	FOR ACCESSORIES		
IC401LR	5350251	IC HA1406		5593131	PRERECORDED TAPE (C-15)
IC402LR	5350251	IC HA1406	Δ	7083881	AC ADAPTOR (AW-910)
IC501	5352321	IC LA4125	MISCELLANEOUS		
IC701	5352351	IC LB1415	1	6034692	FRONT CASE ASSEMBLY
LED701	5380461	LED LN04202P	2	6034682	REAR CASE ASSEMBLY
LED702	5380462	LED LN05202P	3	7776042	TERMINAL
Q101-103	5321271	TRANSISTOR SILICON 2SC1674L 600MHZ	4	6303281	SPRING
Q104	5321281	TRANSISTOR SILICON 2SC1675-L 230MHZ 200M	5	6334231	HANDLE
Q201	5321281	TRANSISTOR SILICON 2SC1675-L 230MHZ 200M	6	5402601	SPEAKER-7.7CM
Q401LP	5320023	TRANSISTOR SILICON 2SC458LGC	7	5380411	LED GL-9R6
Q402LR	5320023	TRANSISTOR SILICON 2SC458LGC	8	5380271	LED GL-4PR2
Q403LR	5320023	TRANSISTOR SILICON 2SC458LGC	9	6092741	CASSETTE LID ASSEMBLY
Q404	5320623	TRANSISTOR SILICON 2SC1213A-C 80MHZ 400M	10	6055301	BUTTON
Q601	5322339	TRANSISTOR 2SC156A	11	6055302	BUTTON (REC)
Q701	5320023	TRANSISTOR SILICON 2SC458LGC	12	6055303	BUTTON (PLAY)
ZD601	2330632	ZENER DIODE H27B	13	6533401	SPRING
TRANSFORMERS			14	7745621	SPACER
T101	5140161	FM IF TRANSFORMER	15	5752541	ROD ANTENNA
T201	5140171	FM IF TRANSFORMER	16	6055251	KNOB (TUNING)
T202	5130281	AM IF TRANSFORMER	17	6055241	KNOB (BAND+FUNCTION)
T203	5130282	AM IF TRANSFORMER	18	6055221	KNOB (VOLUME, TONE)
T401	5260411	BIAS OSCILLATOR COIL	19	6055231	KNOB (MODE)
COILS			20	6173931	BATTERY LID
L101	5127021	FM RF COIL	21	6759761	CHASSIS
L102	5127031	FM OSCILLATOR COIL	22	6541171	SPRING
L103	5127051	FM CHOKE COIL	23	6398611	POINTER
			24	5380041	LED GL-31AR
			25	6759771	JACK PLATE
			26	6758121	MIC HOLDER
			27	6570271	MIC HANGER
			28	7547921	ROLLER SHAFT
			29	7755301	SHEET

JL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MISCELLANEDUS			63	7546641	CASSETTE UP METAL
30	7755291	SHEET PLATE	64	6545481	SPRING
31	5421611	BUILT IN MICROPHONE	65	7313961	SWITCH FUNCTION LEVER
32	7317281	HEAD PLATE	66	6540331	SPRING
33	6365491	PRESSURE ROLLER ARM ASSEMBLY	67	7317311	LOCK LEVER ASSEMBLY
34	6545451	SPRING	68	6305291	SPRING
35	6305281	SPRING	69	7313991	LOCK LEVER HOLDER
36	7317291	PAUSE LEVER	70	6413401	TURNTABLE ASSEMBLY
37	6540281	SPRING	71	6305301	BACK TENSION SPRING
38	7313891	PAUSE LOCK PLATE	72	6413861	CLUTCH ASSEMBLY
39	6545441	SPRING	73	6540341	SPRING
40	7314091	FF SLIDER	74	6382041	RF IDLER
41	6540291	SPRING	75	6540261	SPRING
42	6540251	SPRING	76	6373381	FLYWHEEL
43	6381841	FF IDLER	77	6305311	SPRING
44	7314021	PEVIEW LEVER	78	7664042	MOTOR CUSHION
45	6532541	LEAF SPRING	79	7781861	SCREW
46	7314101	REWIND SLIDER	80	5576591	DC MOTOR
47	6540321	SPRING	81	6354892	BELT
48	7314111	PLAY SLIDER	82	5559221	COUNTER
49	6540271	SPRING	83	6354883	BELT(COUNTER)
50	6540241	SPRING	84	5603351	LEAF SWITCH
51	7313911	RECORDING LEVER	85	6532561	LEAF SPRING
52	6540301	SPRING	86	7787301	WASHER
53	7313901	LEVER	87	7769391	POLYSLIDER WASHER
54	7546631	METAL	88	6540521	SPRING
55	6545471	SPRING	89	7787311	POLYSLIDER WASHER
56	7313921	LEVER	90	7787312	POLYSLIDER WASHER
57	7546651	METAL	91	7787313	POLYESTER WASHER
58	6545461	SPRING	92	5444761	RECROD PLAYBACK HEAD
59	7317301	STOP/EJECT LEVER	93	5445101	ERASE HEAD
60	7313941	KICK LEVER	94	6428051	DIAL PULLYE
61	6540311	SPRING	95	6791211	FERRITE ANTENNA HOLDER
62	7313951	CASSETTE UP LEVER	96	6758131	LED HOLDER

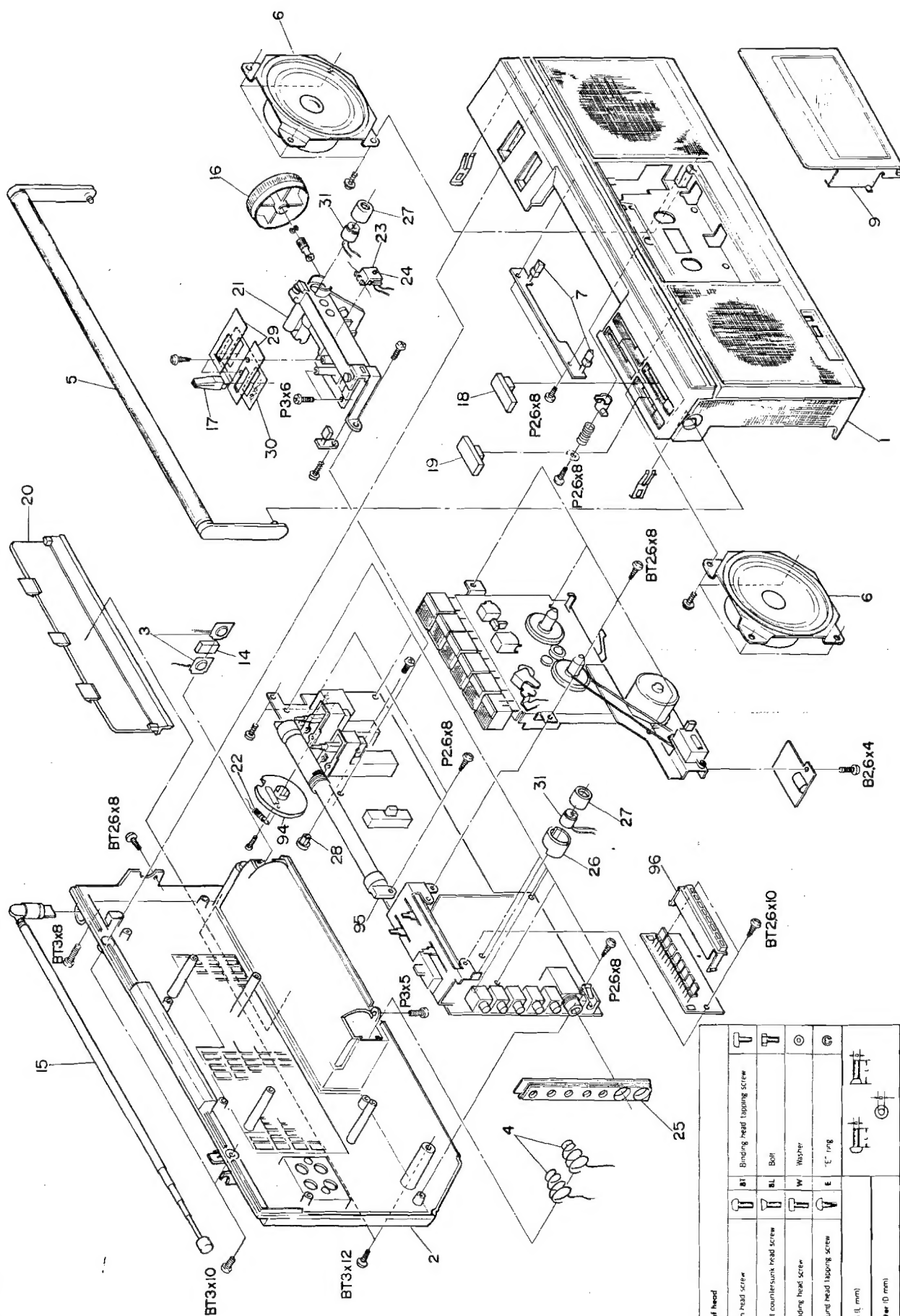
EXPLODED VIEW



When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.



EXPLODED VIEW



Type of head					
P	Pin head screw	BT	Binding head tapping screw	T	
F	Flat countersunk head screw	BL	Bolt	T	
B	Binding head screw	W	Washer	⊙	
T	Round head tapping screw	E	"E" ring	⊕	
Length (l, mm)					
Diameter (D, mm)					

When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.

EXPLODED VIEW

